



SURE STAR COMPUTER CO., LTD 添誠資訊股份有限公司
<http://www.surestar.com.tw> Tel:+886 2 2682 2505
E-mail:info@surestar.com.tw Fax:+886 2 2682 2515
NO.2-1, DAAN ROAD, SHULIN .DIST., NEW TAIPEI CITY 238, TAIWAN

SPECIFICATION

Model Name :

R4B series

Description :

500W 、 600W 、 700W 、 800W Mini Redundant Power Supply (PSII)

Version : B0

Issued Date : 20211101



1. General Description

This specification defines the characteristic of 1 + 1 redundant power supply with 4 Unit high. And **SURE STAR** model name is R4B-500G1V2 for 500W 、R4B-600G1V2 for 600W 、R4B-700G1V2 for 700W 、R4B-800G1V2 for 800W output.

2. Input Characteristic

2.1. Input connector

The input connector shall be an IEC60320 C14 inlet, rated for 15A/250Vac.

2.2. Input Voltage and Frequency

Minimum	Nominal	Maximum	Measure
90	100~240	264	Vac
47	50~60	63	Hz

2.3. Input Current and Inrush Current

Input Voltage	Max. Input Current	Inrush Current
115Vac	10A/10A/12A/12A	30A
230Vac	5A/5A/6A/6A	60A

2.4. Power Factor

The minimum power factor shall be 0.95 with full load and input 230Vac/50Hz.

3. Output Characteristic

3.1. DC Output Characteristic

Output Voltage	Min. Current	Max. Current	Regulation	Ripple & Noise
+3.3V	1A	25A/25A/32A/32A	±5%	50mV
+5V	1A	25A/25A/32A/32A	±5%	50mV
+12V	1A	41A/49A/57A/65A	±5%	120mV
-12V	0A	0.8A	±5%	120mV
+5VSB	0.1A	3.5A	±5%	50mV

Note :

1. The combined power from +3.3V and +5V shall not exceed 170W/180W/190W/190W.
2. The max total power shall not exceed 500W/600W/700W/800W.
3. Ripple and noise bandwidth is set to 20MHz.
4. Add a 0.1uF ceramic capacitor in parallel with a 10uF tantalum capacitor at output connector terminals for ripple and noise measurement.



3.2. Efficiency

The minimum efficiency of power supply is 80% with full load and 115Vac/60Hz input.

3.3. Hold up Time

The output voltages stay in regulation at least 16ms with 100% load after loss of AC input.

3.4. Rise Time

The output voltages rise from 10% to 90% with full load shall be in 20ms maximum.

3.5. Dynamic Loading

The output voltages shall remain in regulation for the step loading, and in the limits for the capacitive loading specified below :

<i>Output</i>	<i>Step Load Size</i>	<i>Load Slew Rate</i>	<i>Capacitive Load</i>
+3.3V	30% of max load	0.5A / μ sec	1000uF
+5V	30% of max load	0.5A / μ sec	1000uF
+12V	65% of max load	0.5A / μ sec	2200uF
+5VSB	25% of max load	0.5A / μ sec	1uF

3.6. PSON Remote on/off Control

The PSON signal is required to remotely turn on/off the power supply.

PSON is an active low TTL compatible signal that turns on the main power rails.

	<i>PSU On</i>	<i>PSU Off</i>
PSON Signal	LOW (0.8V max.)	HI (2V min.)

3.7. Power Good Signal

Power Good, also called PG or PWOK, is an active high TTL compatible signal.

PG signal is to indicate that all output voltages are in regulation and ready for use.

Below is for a representation of the timing characteristics of PG signal.

Power Good on delay time	100ms to 500ms
Power Good off delay time	1ms (min.)



4. Protection

4.1. Over Current Protection

<i>Output</i>	<i>Min.</i>	<i>Max.</i>	<i>Comment</i>
+3.3V	110%	150%	PSU shutdown
+5V	110%	150%	PSU shutdown
+12V	110%	150%	PSU shutdown

4.2. Over Voltage Protection

<i>Output</i>	<i>Min.</i>	<i>Max.</i>	<i>Comment</i>
+3.3V	3.7V	4.1V	PSU shutdown
+5V	5.7V	6.5V	PSU shutdown
+12V	13.1V	14.5V	PSU shutdown

4.3. Short Circuit Protection

<i>Output</i>	<i>Comment</i>
+3.3V	PSU shutdown
+5V	PSU shutdown
+12V	PSU shutdown

4.4. Over Temperature Protection

The power supply would be protected against over temperature condition by loss of cooling or excessive ambient temperature. The PSU will shutdown in an OTP condition.



5. Power System Signal Status

5.1. Buzzer Status

<i>Power Supply Condition</i>	<i>Buzzer Status</i>
No input power to PSU	OFF
Input present/ only standby output on	OFF
Power supply outputs ON and OK	OFF
Power supply failure	Beeping

5.2. LED Indicator

<i>Power Supply Condition</i>	<i>Module LED</i>	<i>System LED</i>	<i>PW1/PW2 LED</i>
No input power to PSU	OFF	OFF	OFF
Input present/ only standby output on	Red	Amber	OFF
Power supply outputs ON and OK	Green	Green	Amber
Power supply failure	Red or OFF	Green Blinking	OFF

System LED and PW1 PW2 LED are optional.

5.3. TTL Signal

<i>Power Supply Condition</i>	<i>Output Condition</i>	
	<i>Min.</i>	<i>Max.</i>
Normal (Power Supply ON)	3V	5.25V
Failure (Power Supply OFF)	0V	1V

6. Insulation

6.1. Dielectric Withstand Voltage

Primary to Ground	1500Vac (10mA) for 1 second
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6.2. Leakage Current

Leakage current is 3.5mA maximum at 240Vac/50Hz.

7. Safety

CB、CE、TUV、UL、BSMI、CCC。

Please visit our website and get the latest safety certificate.



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8. EMC

CE 、 FCC 、 BSMI 、 CCC 。 (Class B)

Please visit our website and get the latest EMC certificate.

9. Environmental Requirement

9.1. Temperature

Operating : 0°C to +50°C.

Non-Operating : -20°C to +70°C.

9.2. Humidity

Operating : 20% to 90% , non-condensing.

Non-Operating : 5% to 95% , non-condensing.

9.3. Altitude

Operating : Up to 5000m.

9.4. Cooling Method

By DC fan.

10. Reliability

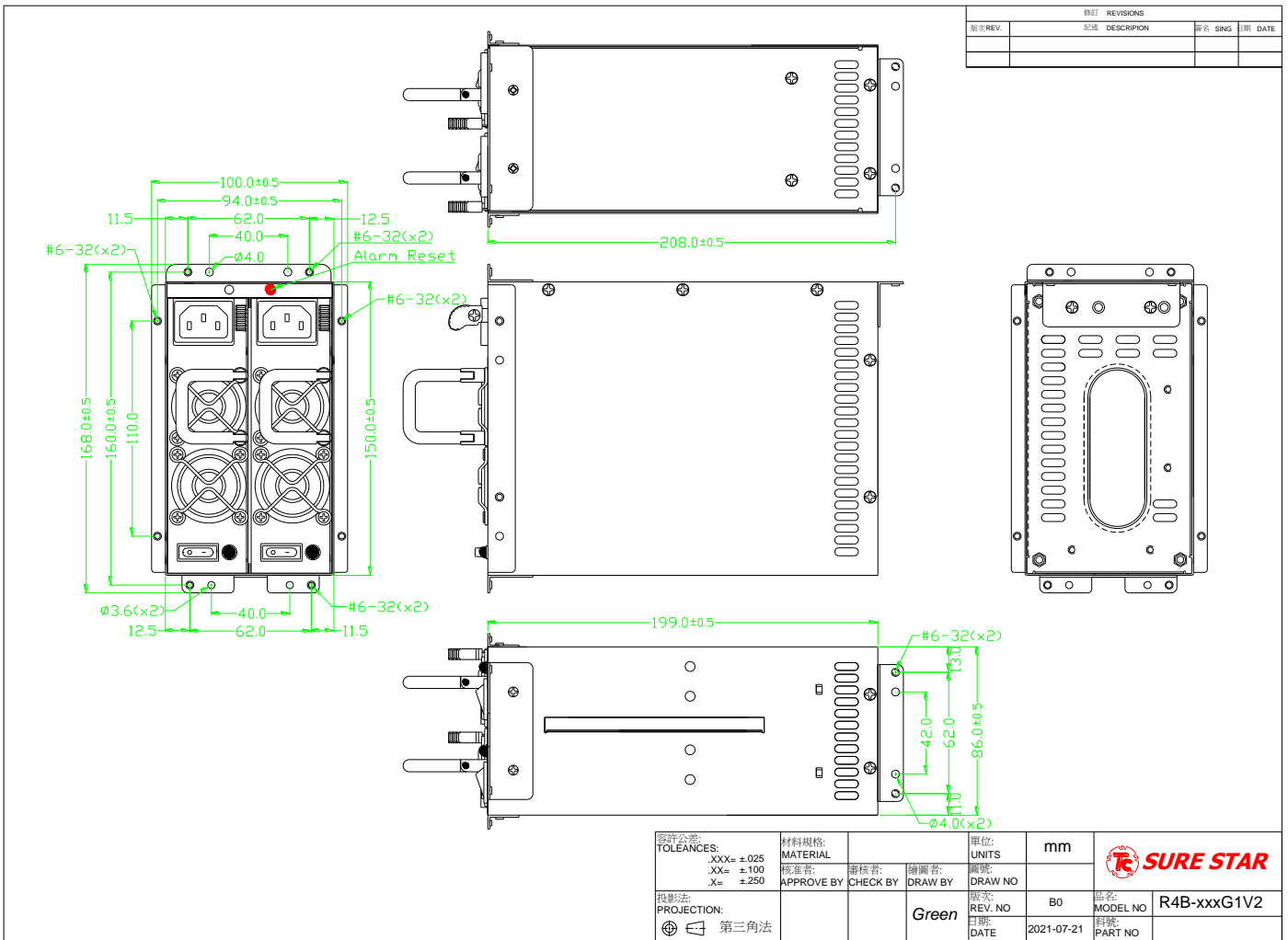
10.1. MTBF

Using MIL - HDBK -217F the calculated MTBF > 100,000 hours at 25°C.



11. Mechanical Drawing and Output Wire

11.1. Outline (bracket optional) : W150 * H86 * D199mm.





11.2. Output Wire (could be customization) :

				VERSIONS			
VER	DESCRIPTION	SIGN	DATE				

SATA HDD				
HOUSING : MOLEX 67582 series or equivalent				
TERMINAL: MOLEX 67581 series or equivalent				
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE LENGTH
S1	1	ORANGE	+3.3V	18AWG 480mm±20mm
	2	BLACK	COM	18AWG
	3	RED/RED	+5V	18AWG
S2	4	BLACK	COM	18AWG 150mm±15mm
	5	YELLOW	+12V	18AWG
S3	1	ORANGE	+3.3V	18AWG 150mm±15mm
	2	BLACK	COM	18AWG
P2	3	RED/RED	+5V	18AWG
	4	BLACK	COM	18AWG
	5	YELLOW	+12V	18AWG
P6	1	ORANGE	+3.3V	18AWG 480mm±20mm
	2	BLACK	COM	18AWG
	3	RED	+5V	18AWG
	4	BLACK	COM	18AWG
P2	5	YELLOW	+12V	18AWG 100mm±10mm
	6	BLACK/BLACK	COM	18AWG
	7	BLACK/BLACK	COM	18AWG
	8	BLACK	COM	20AWG
TTL Signal Connector HOUSING: Molex 22-01-3027 or equivalent				
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE LENGTH
P6	1	YELLOW	+12V	18AWG 860mm ±20mm
	2	BLACK	COM	24AWG
P2	3	RED	+5V	24AWG
	4	BLACK	COM	20AWG

40+4Pins(EPST12V)				
HOUSING : MOLEX 5557 series or equivalent				
TERMINAL : MOLEX 5556 series or equivalent				
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE LENGTH
P24	1	ORANGE(+3.3V)	18AWG	480mm±24AWG
	2	ORANGE(+3.3V)	18AWG	480mm±24AWG
	3	BLACK(GND)	18AWG	480mm±18AWG
	4	RED(+5V)	18AWG	480mm±24AWG
	5	BLACK(GND)	18AWG	480mm±18AWG
	6	RED(+5V)	18AWG	480mm±18AWG
	7	BLACK(GND)	18AWG	480mm±18AWG
	8	GRAY(PG)	480mm±44WG	480mm±18AWG
	9	PURPLE(+5VSB)	480mm±18AWG	480mm±18AWG
	10	YELLOW(+12V)	18AWG	480mm±18AWG
	11	YELLOW(+12V)	18AWG	480mm±18AWG
	12	ORANGE(+3.3V)	18AWG	480mm±18AWG
P4A	13	BLACK(+3.3V)	18AWG	480mm±24AWG
	14	BLUE(+5V)	18AWG	480mm±18AWG
	15	BLACK(GND)	18AWG	480mm±18AWG
	16	GREEN(PS-ON)	18AWG	480mm±24AWG
P4B	17	BLACK(GND)	18AWG	480mm±18AWG
	18	BLACK(GND)	18AWG	480mm±18AWG
	19	BLACK(GND)	18AWG	480mm±18AWG
	20	NC	18AWG	480mm±18AWG
P4C	21	RED(+5V)	18AWG	480mm±18AWG
	22	RED(+5V)	18AWG	480mm±18AWG
	23	RED(+5V)	18AWG	480mm±18AWG
	24	BLACK(GND)	18AWG	480mm±18AWG
4Pins(ATX12V FOR P4)				
HOUSING : MOLEX 5557 series or equivalent				
TERMINAL : MOLEX 5556 series or equivalent				
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE LENGTH
P4A	1	BLACK	COM	18AWG 480mm±20mm
	2	BLACK	COM	18AWG
	3	YELLOW	+12V	18AWG
	4	YELLOW	+12V	18AWG
P4B	1	BLACK	COM	18AWG
	2	BLACK	COM	18AWG
	3	YELLOW	+12V	18AWG
	4	YELLOW	+12V	18AWG
4Pins(FLOPPY DISK) P4J				
HOUSING : MOLEX 8881 series or equivalent				
TERMINAL : MOLEX 8880 series or equivalent				
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE LENGTH
PA	1	YELLOW	+12V	18AWG 480mm ±20mm
	2	BLACK/BLACK	COM	18AWG
	3	BLACK/BLACK	COM	18AWG
PB	4	RED/RED	+5V	18AWG 150mm ±15mm
	1	YELLOW	+12V	18AWG
PH	2	BLACK/BLACK	COM	18AWG
	3	BLACK/BLACK	COM	18AWG
PI	4	RED/RED	+5V	18AWG 150mm ±15mm
	1	YELLOW	+12V	18AWG
PC	2	BLACK	COM	18AWG
	3	BLACK	COM	18AWG
PJ	4	RED	+5V	18AWG 150mm ±15mm
	1	YELLOW	+12V	24AWG
P4E	2	BLACK	COM	24AWG
	3	BLACK	COM	24AWG
P4F	1	YELLOW	+12V	24AWG
	2	BLACK	COM	24AWG
P4G	3	BLACK	COM	24AWG
	4	RED	+5V	24AWG

材料公差 TOLERANCE	材料規格 MATERIAL	單位 UNIT	mm	
XXX± XX± X±	核准者 APPROVE BY	繪圖者 DRAW BY	圖號 DRAW NO.	
投影法 PROJECTION	日期 DATE	版本 VERSION	A0	模型號 MODEL NO.
第三角法	Waylon	日期 DATE	2021/11/01	料號 PART NO.



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12. Customization Note

Customization note shall be listed here.

End of File

NOTE : This data is subject to change without notice.